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ABSTRACT

After presenting a brief history of computer-assisted instruction (CAI), this paper provides an overview of the current uses of computer technology in instruction at U.S. community colleges. This profile focuses on the ways in which the technology has been spread throughout the curriculum, the characteristics of computer laboratories, and the development of local area networks. Examples of the use of CAI in drill and practice, problem solving, tutoring, and simulation are presented, highlighting recent improvements in the sophistication of tutorial and simulation software. Recent developments in the use of hypertext and hypercards are also discussed, along with advances in presentation and classroom demonstration software and instructional support software. A profile is provided of other recent technological innovations, including new education-oriented authoring languages; interactive video; products combining video, sound, and interaction; and hardware advances. Finally, future norms for CAI are projected. A list of sources that describe, review, or distribute academic software is appended. (JMC)

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A SELECTIVE REVIEW OF EDUCATIONAL COMPUTER TECHNOLOGY IN AMERICAN COMMUNITY COLLEGES

September 1990

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JC 900 576

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THE DEVELOPMENT OF TEACHING/LEARNING TECHNIQUE IN PROFESSIONAL SCHOOL

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A Selective Review of Educational Computer Technology in American Community Colleges

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Presented at the
Soviet-American Symposium
"Modern Teaching/Learning Technologies
in
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Abstract

A survey of the current uses of computer technology in the education of American community college students is presented. Several categories of Computer Assisted Instruction are represented including problem solving, tutorial and simulation. More recent developments in interactive video and the use of hypermedia is included. Communication technology in the form of microcomputer networks and microcomputer/mainframe integrated systems are discussed along with the educational effect of this communication technology.

Introduction

This paper's primary focus is on the uses of computer technology by and for students and instructors in American community colleges. Because of limitations of space and time, the attempt here is to give an overview of many, but certainly not all, uses of software and hardware in the community college instructional environment.

First, a short history of Computer Assisted Instruction (CAI), or Computer Assisted Learning (CAL), as it is called in Great Britain, will be presented. Next,

an overview of the present state of instructional technology is offered. Following that is a discussion of new technology and applications. And, finally, trends of the future are presented.

A Short History of CAI

The use of computers in instruction began in the United States in the late 1950's and early 1960's. Some of the earliest work was done at Florida State University, Dartmouth College, and Stanford University. At Florida State, the high-level CAI language Coursewriter, developed by IBM, was used to develop entire university level courses in physics and statistics. The high-level language, BASIC (Beginners All-purpose Symbolic Instruction Code) was developed at Dartmouth during the 1960's. With this easily learned language, simplistic CAI programs could be developed by faculty (or even students).[1]

At Stanford in the mid 1960's two researchers applied CAI methodology to basic skills. This represents the first attempt to increase children's skill levels in basic English and mathematics using computerized drill and practice.[2]

CAI program development continued at Dartmouth for many years. During the 1970's Dartmouth, in conjunction with the universities of Oregon, North Carolina, Iowa, and Texas, formed a consortium (CONDUIT) to acquire, evaluate, and distribute quality instructional computing materials on a national basis to

support higher education. CONDUIT, located on the University of Iowa campus, continues today as a supplier of CAI software.[1]

A similar effort, but encompassing both pre- and post-secondary education, is ongoing at the Minnesota Educational Computing Consortium (MECC) at Lauderdale, Minnesota.[3] Whereas CONDUIT's earliest programs were written for minicomputers and larger machines, MECC from the beginning concentrated on CAI software for the microcomputer.

The Educational Technology Center at the University of California, Irvine, was started in the early 1970's. This project has produced a significant amount of courseware of a fairly complex nature supporting instruction in physics and other selected disciplines at the higher education level.[1]

The PLATO system, funded by the National Science Fou^Xxation and developed by the University of Illinois in the 1960's and 70's, is probably the most well-known CAI project in the world. The second major PLATO installation was located at the University of Delaware, and the third at Florida State University. At the Florida installation support was provided to select Florida high schools for PLATO-based remedial studies in mathematics. During the late 70's and the 1980's several Florida community and junior colleges leased PLATO terminals to provide remedial and college-level CAI to their students. Until recently, this system relied on a large mainframe computer built by Control Data Corporation. Control Data has recently sold PLATO which is now available on a microcomputer network. As of 1990, almost all of the Florida high school and community colleges

have disconnected from the PLATO site at Florida State and discontinued their affiliation with PLATO software. The University of Delaware is in the process of discontinuing their PLATO installation. Most of the software developed on the Delaware PLATO system is being rewritten and ported to microcomputer systems.

One other early CAI project named TICCIT (Time-Shared Interactive Computer-Controlled Information Television) was developed with the aid of a National Science foundation grant at the University of Texas and Brigham Young University. Using minicomputers and modified television receivers, the system was designed to provide basic undergraduate instruction in English and mathematics. It was initially implemented at Phoenix College (Arizona) and the Alexandria Community College (Virginia).[1]

Much of the software written in the 60's and 70's tended to be written in BASIC for CRT terminals and had a drill-and-practice orientation.[4] With the advent of the PC in the late 1970's and early 80's CAI slowly began to evolve in sophistication. However, software packages still tended to continue as exercises, primarily because of small main memory, slow processing speed and low disk capacity. Since the mid-80's dramatic increases in memory and speed have led to greater versatility in instructional software.

Present State of Technology

The use of instructional computer technology at community colleges varies dramatically from one college to another. Some use very little with most of what is used contained in the computer and information science curriculum. Other schools have made a major commitment to advanced technology across the curriculum. However, both extremes form a minority. Most community colleges provide some form of computer assisted instruction to their students.

Generally, the earliest uses of the computer at community colleges could be found in the science, math and business departments and in remedial or pre-college courses. Since the mid-80's, other areas such as foreign language instruction and English have been using the technology more and more. The rate of increase in CAI usage across the curriculum is accelerating. This increased use has been fed by an expansion of the CAI software market and by falling hardware costs. As the decade of the 90's begins, it is difficult to find a subject taught at the community college level for which CAI software has NOT been written. The spread of instructional technology across the community college curriculum parallels the increased use of computers and computer controlled equipment in American business and industry.

Community colleges are meeting the challenge of spreading instructional technology through the curriculum in two basic ways. One way is to first provide equipment, software and training to the faculty. While the teachers are becoming

computer literate and discovering the advantages or disadvantages of using the technology in their discipline, student labs are set up to apply what the teachers are learning. A second approach is to provide equipment and software to the students and have the student pressure on the faculty cause a change in the way instruction is delivered. Most of the successful community colleges adopted the first technique, that of providing the faculty with the resources first. At least one community college that chose the second route expressed regret to this writer. If they could start again they would first provide the faculty with equipment and training with student use being driven by faculty interest.

Almost all community colleges now provide computer equipment for student use in the form of an open laboratory. An "open" lab is one that students may use on a first-come first-served basis for a variety of courses. Reservation lists are sometimes found in these open labs for specialized equipment or during very busy times. Also provided at many colleges are specialized computer labs. These include writing labs for English classes, math labs, physics and biology labs, graphics labs for art and engineering classes, foreign language labs, accounting labs, word processing labs and labs for pre-college remediation and adult basic education. The equipment in these labs range from the low end Apple II+ computers to the high end Apple Macintosh and IBM model 80 computers. However, most computers used at community colleges are IBM or IBM compatible. The Apple II+ computers used are those that were bought as many as 10 years ago and are used mainly to run simple CAI software. The Apple Macintosh

computers are found mainly in writing labs, desktop publishing and graphics labs. The IBM computers, from the older XTs to the newer PS/2s and their clones, are found in business, science and computer science labs.

One of the latest trends at community colleges is to incorporate all computer assisted instruction in a single facility. For example, Glendale Community College near Phoenix, Arizona has such a facility. The organization of the building at Glendale is a very large centralized open lab with specialized labs in rooms surrounding the open lab. Obviously a single facility is easier and less costly to manage and staff than several sites scattered across the campus.

During the past few years, many colleges have been interconnecting their computers. It is not at all unusual to enter a lab and find the microcomputers connected in a Local Area Network (LAN) configuration. This means that peripheral equipment in the lab is shared among all the microcomputers. In this way, three or four different types of printers may be accessed by any of the computers on the network. Also, software can be stored on a disk device attached to the network server and downloaded to each microcomputer. Some networks also provide the ability to send messages from one micro to another on the LAN. With special software, this type of arrangement can be used in a classroom situation with the teacher being able to monitor each student's progress from a teacher's console.

Not only are the computers in individual labs connected to each other through a LAN, but the LAN may also be connected to other LANs and to a

mainframe. Florida Community College at Jacksonville has begun a process that will ultimately connect every computer at each of the five campuses and the College Administration mainframe to each other. This college-wide network will allow, among other things, a common user interface, the sharing of computing resources college-wide, improved campus to campus communications and better monitoring of computer usage. Also, since the college mainframe is connected to the state university computer network and will soon be connected to a state-wide library network, faculty members and students will have access to state and national research and communication facilities through a networked microcomputer in their office or lab.

CAI Examples

Examples from each of the major categories of CAI (drill and practice, tutorial and simulation) can be found in use on community college campuses. Unfortunately, quite a bit of what is being used is of poor quality. Decker Walker and Robert Hess of Stanford University made the following statement in 1984: "Some established professionals in the field of computer-based education claim that 95 percent of the educational software available for microcomputers is of poor quality."[5] In 1984, microcomputers were still relatively new on the educational scene. Many teachers became interested in computing, learned how to program and created CAI software. We certainly know now that being a trained teacher

does not guarantee that the software written by that teacher will be effective. Only during the last half of the 1980's have enough faculty recognized the low quality CAI software problem. Research on what constitutes effective CAI has finally reached the college faculty. It is now easier to make informed decisions about what software to purchase. The research and greater selectivity in purchasing has led to an overall improvement in the quality of CAI software found in college use.

That improvement can be found in tutorial and simulation software. Quite a bit of the earlier tutorials were nothing more than "page-turning." That is, a sequential text book approach. Now it is possible to find good quality tutorials on any subject. The "good" tutorial or simulation software demonstrates, among other characteristics, a careful planning of the screen display, helpful hints and appropriate feedback to the student to alleviate frustration, explanatory graphics, consistency of the human-machine interface, and a non-sequential branching-type programming that allows the student to skip material he understands or review material he does not understand.

Educational games play an insignificant part in the educational process in community colleges. There are, however, a significant number of games used in early education (4 to 12 years of age). The computer game industry is doing well, especially with adventure and arcade type games. This may cause a trend toward educational games in higher education in the future.

The development of HyperCard for the Macintosh computer has led to some exciting uses in education. HyperCard is a software product available on all Macintosh computers. It can be thought of as an object oriented authoring language with components of word processing, database and graphics. It is relatively easy to learn. A teacher can create his or her own CAI material with this sophisticated product. HyperCard lends itself to non-linear type programming.

Hypertext is another software capability that has been available on the Macintosh for several years. Just recently this function has matured to a usable stage on IBM computers. Both HyperCard and Hypertext work in a graphics oriented environment where much of the input from the user comes from a mouse or pointing device. Objects on the screen can be linked to other objects. An object can be a graphic or text or even sound if the computer has the appropriate hardware. This type of software has been used in foreign language and writing classes. It could also be used in any subject that requires the student to prepare a paper of some kind. For example, the student prepares a research paper on early Russian history. Pictures and other graphics may be scanned into the computer for inclusion with the text of the paper that appears on the screen. Any word of the text or any picture or part of a picture can be designated as a link to other explanatory text or another picture or sound. Let's say that the student has included some pictures of Russian rulers. When the teacher reading the paper moves the arrow on the screen to a picture of Alexander Nevsky and "clicks" the

mouse button, he hears a portion of the Prokofiev musical composition, "Alexander Nevsky," and reads an explanation of the music. The links can continue with a "click" on Prokofiev which might provide a short biography of the composer. Finally, the teacher returns to the screen display where he left off and continues reading. This is only one of many uses for the hypertext software.

A business software application program that was developed in 1979, has had an important impact on education as well as the way business is run in the U.S. That software application is generally known as spreadsheet software. The electronic spreadsheet allows the entering and manipulating of data in a grid pattern. Both the data and the formulas to process that data appear in the grid. If the data are changed, the program instantly recalculates all formulas and displays the new information. This program is used to facilitate problem-solving in education and industry. Instructors are able to set up scientific/mathematical models in different disciplines for students to manipulate. Such models might be used to solve problems in economics, biology, agriculture, weather forecasting, ecology, genetics, population dynamics, business accounting, and so on.

Presentation/Classroom Demonstration Software

A class of software that is used in the classroom for presentation of material or demonstration is now available for teachers. For example, the teacher can prepare a "slide show" with Harvard Graphics, a graphics/presentation software

package. The slide show can be displayed on the monitor screen, or projected in a classroom. The screen displays prepared by the instructor can also be turned into actual 35MM color slides with the use of a special peripheral device and camera that photographs the screen image onto slide film. The slides may then be shown in class with a slide projector rather than the computer. With Harvard Graphics the teacher can create organizational and text charts, graphs, pie/bar/line charts and drawings without a great deal of training and in a short period of time.

Demonstration software is especially effective when used in science and math classes. Graphing programs are used in many such classes. Instead of the teacher having to take the time to draw a graph on the board, a function may be entered and the resulting graph displayed immediately. Another advantage of this software is in demonstrating the result of changes in the function causing the graph to change. Graphic displays are also very useful in chemistry lecturing. There is a program called Spectral Interpretation by Donald L. Pavia of Western Washington University. With this program you can demonstrate how chemical shifts and the integrals can provide information about the number and type of hydrogens contained in a molecule. Many dynamic lecture aids are included:

- Alternate between spectrum types
- Measure coupling constants
- Calculate integrations on screen
- Display or hide the structure
- Highlight and zoom options
- Notepad and calculator

A database of almost 200 compounds are available with this program.

Instructional Support Software

Word processing is used extensively by instructors in community colleges. A variety of materials are prepared by individual teachers. These materials include lesson plans, handouts for students and preparation of transparencies. Recording these documents electronically allows for easy updating and changing from one school term to another.

A software product closely related to word processing is desktop publishing software. Desktop publishing programs are graphics oriented, allowing a much greater variety of printing styles and graphics. When used with a scanner and laser printer, very sophisticated materials may be prepared with a small expenditure of teacher time.

Spreadsheet software mentioned earlier as a problem solving tool for use by students is also used by instructors as educational support software. Many teachers use spreadsheets as electronic grade books. This is a great time-saver for the calculation of grades. Class statistics can be generated easily (test means, medians and standard deviations along with histograms, student rankings and the comparison of one class with another over time). Spreadsheets can also be used to keep the student more closely advised of his/her progress in the course. Individual student progress reports can be printed and individualized form letters praising or warning students about their work may be automatically generated. Special grade book software is also available and used by teachers to do most of the tasks

mentioned above. Some of this specialized software can be used in conjunction with an optical scanner. Objective tests (i.e., multiple choice, true/false, matching, etc.) can be taken on special forms which are then scanned and graded very quickly. The scanner is connected to the microcomputer which records the grade for each student and produces, on request, any of several printed reports of use to the instructor.

Database software is used for research by some instructors. Each record in the database file may represent a reference or resource on the research topic. Fixed fields in each record are used to identify the source and subjects for indexing. A special memo or note field in each record allows notes from the source to be entered. The memo field can hold thousands of words. The records of the research file may be sorted by any of the fields (author, title, subject(s), etc.). Records matching a particular condition may be extracted from the database. For example, the titles of sources by a particular author could be printed. Or, all references in the database that were written during the past two years could be displayed.

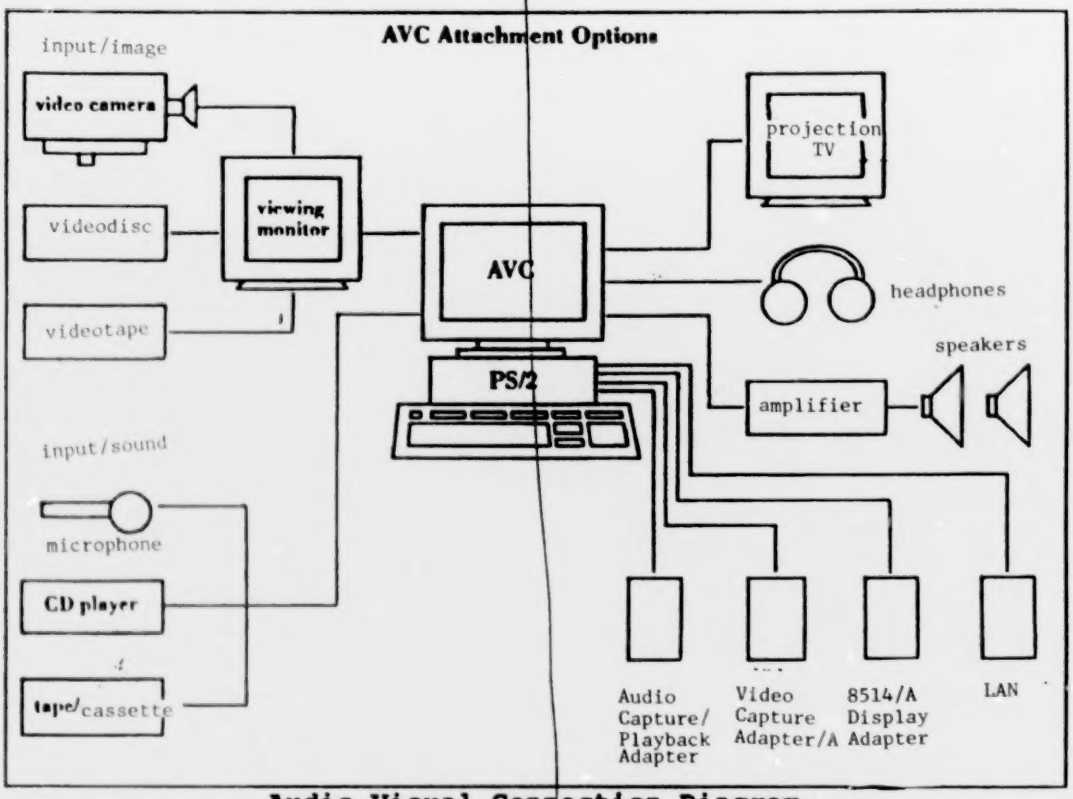
Another use of database software is as a catalog or inventory of items that the teacher uses. An art teacher catalogs slides; a science teacher maintains an inventory of science equipment and/or materials/chemicals; a music teacher catalogs musical scores for a band, orchestra or chorus. Naturally, this software can also be used by students as an aid in their research and other educational work.

There have been some exciting developments very recently in both hardware and software that are changing what students and teachers do in and out of the classroom. New versions of the programming languages BASIC, Pascal and C make it much easier to program CAI software. New education-oriented authoring languages such as ACTOR make it possible for almost any instructor to prepare CAI materials in a graphics environment without devoting an inordinate amount of time to learning the language and programming the software.

Interactive video, using a videodisc attached to a microcomputer with a touch screen has been proven to be an effective teaching tool. Business Week, a periodical, recently reported that interactive video instruction shortens learning time by as much as 50% while increasing retention by 80%. Instructional programs in foreign language, chemistry and the health field are available for this media. The videodisc and the computer combine to produce a high quality motion video with the interaction of CAI.

Several new IBM products also combine video, sound and interaction in a graphics/window environment. The M-Motion Video Adapter digitizes video for storage, creation, synchronization and editing along with the recording and playback of digitized audio to and from disk storage. This adapter also allows the display of full-motion color video from videodiscs, video cameras, televisions or VCRs on a standard PS/2 color monitor. The audio input can come from a tape

recorder, CD player, microphone or any other device that produces line-level audio output. Since these inputs are digitized, they may be edited and displayed anywhere on the screen. Even multiple images can be displayed simultaneously in different windows on the monitor.



Audio Visual Connection Diagram

Another new IBM product is called the Audio Visual Connection (AVC). The AVC has all of the capabilities of the adapter described above and includes a powerful authoring language that allows very sophisticated editing of the images and sound. Combined with video projection onto a screen, this product can be

used in presentations to groups, large or small as well as instruction on an individual level.

Combining the hardware described above with the software product, PODIUM, gives the instructor the ability to transform his traditional class lectures into a "hyperlecture." Hyperlecturing is the act of using hypermedia to give an interactive presentation. PODIUM, developed at the University of Delaware, can be thought of as an authoring tool for presentations. It allows the instructor to quickly arrange and edit a series of still or motion video, graphics, text and sound to be presented from a variety of inputs in a specific order. Changes can even be made during the lecture. Thus the prefix, "hyper" (non-linear, jumping from one object to another) is combined with "media" and "lecture" to form the new descriptive terms, "hypermedia" and "hyperlecture."

The Future

With OS/2, the latest IBM operating system gaining acceptance, and more powerful hardware from Apple and IBM, graphics-oriented user interfaces will become the norm. This means the keyboard becomes less important as an input device. The track-ball, mouse, touch screen and audio input devices will become more common. Visual learning techniques will be emphasized. Presentation graphics will be commonly used in faculty lectures in the near future. Very sophisticated computer simulations will be available for all subjects.

Small but powerful portable computers are in abundance. Possibly before the year 2000, they will be so small and inexpensive that they will be as common then as the hand held calculator is today. Students will use them to store their class notes, write papers, do research, create graphic art, compose music, watch a digitized video and communicate with their instructor and other students.

Fast communication is already very important in all facets of American life. With the increase in computer interconnectivity, both faculty and students will have vast information resources at their fingertips. Education will need to quickly adapt to this environment. What will we do with all this information? Teachers will need to gain additional expertise in manipulating the new technology. They will also need to become expert information managers. Instead of the holder of all knowledge, the teacher must become a knowledge facilitator. To do this teachers will need a great deal of support and funding from the government, research universities, businesses and the administration of the college. We will all need to become learners as well as students. If we do that perhaps we will become better teachers.

References

1. Chambers, Jack A. and Sprecher, Jerry W., "Computer-Assisted Instruction: Current Trends and Critical Issues," Communications of the ACM, 23(June 1980), 332-342.

2. Suppes, P., and Macken, E., "The Historical Path From Research and Development to Operational Use of CAI," Educational Technology, 18, 4(1978), 9-12.

3. Microcomputer Report. Minnesota Educational Computing Consortium, Instructional Services Division, Lauderdale, Minnesota, July 1979.

4. Staman, E. Michael, "An Action Plan for infusing Technology into the Teaching/Learning Process," CAUSE/EFFECT, 13, 2(1990), 34-40.

5. Walker, Decker F. and Hess, Robert D., "Evaluation in Courseware Development," Instructional Software: Principles and Perspectives for Design and Use. Wadsworth, Inc. 1984, p. 204.

Appendix

The following is a list of sources that describe, review, and/or distribute academic software for microcomputers taken from Technology on Campus, winter 1989.

Apple-Specific:

Kinko's Academic Courseware Exchange
255 West Stanley Avenue, Suite A
PO Box 8000
Ventura, CA 93002-8000
Phone: (800) 235-6919

The Macintosh Educational Software Collection
Chariot Software
3659 India Street, Suite 100
San Diego, CA 92103
Attn: Kathy Henderson
Phone: (619) 298-0202

The Macintosh 1989 Product Registry
Redgate Communications Corporation
660 Beachland Blvd.
Vero Beach, FL 32963
Phone: (407) 231-6904

IBM-Specific:

The Information System for Advanced Academic Computing (ISAAC) an electronic bulletin board and set of databases about the use of IBM-compatible hardware and software for instruction in higher education. To join and gain access to ISAAC (on fee), write or call:

ISAAC Access
m/s FC-06
University of Washington
Seattle, WA 98195
Phone: (206) 543-5604

Wisc-Ware
Academic Computing Center
University of Wisconsin-Madison
1210 West Dayton Street
Madison, WI 53706
Phone: (800) 543-3201

The Academic Software Library (TASL) is a newly formed consortium of five professional societies set up as a distribution channel for IBM-compatible instructional and research software. To receive information about TASL, phone at (800) 543-8275 or write Wisc-Ware at the above address. The five societies are:

The American Institute of Physics
The American Society for Engineering Education
The Modern Language Association
The Center for Applied Linguistics
The American Political Science Association

Tools for Learning, published by IBM, is a catalog containing synopses of approximately 100 academic software packages produced in various joint projects between IBM and faculty members from colleges and universities around the world. To order a free copy, write or call:

IBM Corporation
472 Wheelers Farms Road
Mail drop 19
Milford, CT 06460
Phone: (203) 783-7306

The Catalog of higher Education Application Programs, published by IBM, is an extensive compilation of over 1500 productivity tools and programs for teaching, research, and administrative functions in higher education. The catalog is ordered through IBM Marketing Branch Offices, publication G320-9748. The price is $8.40.

Not Machine-Specific:

CONDUIT
University of Iowa
Oakdale Campus
Iowa City, IA 52242
Phone: (319) 335-4100

The University Software Resource Guide, co-published by Computer Learning Month and EDUCOM, consists of information on how to find, select, and develop courseware for higher education instruction. The price is $3.00. Order it from:

Computer Learning Month
PO Box 60967
Palo Alto, CA 94306-0967

The Educational Software Selector (TESS), produced by the EPIE Institute, is a comprehensive directory of educational software covering all disciplines. Over 3,700 of the 11,000 programs listed in the 1988-89 0 '3on are appropriate for the college level. The 1989 version of TESS is in four volumes organized by subject ($29.95 each, $99.95 for the complete set). To order TESS or request information, contact:

EPIE Institute
PO Box 839, Dept. 4
Water Mill, NY 11976
Phone: (516) 283-4922

The National Collegiate Software Clearinghouse specializes in distributing higher education software for the social sciences and humanities. For a free catalog contact:

National Collegiate Software Clearinghouse
NCSU Box 8101
Raleigh, NC 27695
Phone: (919) 737-3067

The Directory of Software in Higher Education, published by Online Computer Library Center, Inc. (OCLC), is a listing of academic software compiled from the "Computer Software for Higher Education" column of the Chronicle of Higher Education. To order this $5.00 directory, contact:

OCLC
Department 630
Box ONB
Columbus, OH 43265
Phone: (614) 764-6000

Other Resources:

The Directory of Software Sources for Higher Education: A Resource Guide for Instructional Applications describes sources of software, reviews, and evaluations, as well as other information about software for higher education. It is compiled by the Educational Software Library of Carnegie-Mellon University for EDUCOM's Software Initiative. The directory costs $29.95, and is available from:

Peterson's Guides
166 Bunn Drive
PO Box 2123
Princeton, NJ 08543-2123
Phone: (800) EDU-DATA

SoftInfo, jointly supported by IBM and the University of Bridgeport in Connecticut, is a database of sources of information about IBM-compatible software. SoftInfo can be accessed through ISAAC (see above).

The University Software Resource Guide from Computer Learning Month and EDUCOM (see above) contains a listing of major directories of educational software information.

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